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are rejected by Newcomb and Tisserand, as the accounts of them are vague and untrustworthy.

The inequality of long period,

$$R = A \sin at + B \cos at,$$

which is needed to determine the mean motion with precision, and is introduced as an empirical term, remains to be accounted for theoretically. The combinations that can be made of the mean longitudes of the Moon, the Earth, and a planet, and those of their nodes and perihelions are very numerous, and there may be, besides V_1 , and the small inequality arising from the action of Jupiter discovered by Neison, other inequalities having sensible coefficients. Also, the value of V_1 , may not be correctly determined. But Tisserand thinks that in the end theory will triumph, and the law of gravitation will completely explain the Moon's motion.

ASAPH HALL, JR.

NOTE.

The principal formula demonstrated in the article "On certain space and surface integrals," pp. 61-63 of this volume, had already been given by J. Somoff. In the more general case of oblique co-ordinates it appears in his memoir "*Moyen d'exprimer directement en coordonnées curvilignes quelconques, orthogonales ou obliques, les paramètres différentiels du premier et du second ordres et la courbure d'une surface*," p. 14, *Memoirs St. Petersburg Academy*, 7 series, Vol. VIII. (1865), and is repeated in his Theoretical Mechanics with applications to several special cases. It is found on p. 13 of the second volume of Professor Ziwet's translation of the work into German, *Theoretische Mechanik*, Leipzig, Teubner, 1879. The information contained in this note was kindly supplied to the author by Professor Ziwet.

THOMAS S. FISKE.